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## NOTES AND DESCRIPTIONS OF ORTHOPTERA FROM THE WESTERN UNITED STATES,

In the Entomological Collection of the University of Kansas.

By JAMES A. G. REHN, of the Academy of Natural Sciences of Philadelphia.

Read (by title) before the Academy, at Topeka, December 31, 1904.

THE material treated in the following pages was kindly submitted to me for study by Prof. F. H. Snow, of the University of Kansas. The greater part of the material was collected by the University expedition of 1903 to Arizona, the details of which trip have already been published by Professor Snow.\* As the localities are there discussed by one thoroughly acquainted with them, no remarks need be made here. The types of all new forms are in the University museum. Finally, I wish to thank Professor Snow for the opportunity afforded to study the material:

### Family FORFICULIDÆ.

*Labia minor* Linnaeus.

Douglas county, Kan.; July, E. S. Tucker. One female.

Clark county, Kan., 1962 ft.; June, F. H. Snow. One female.

### Family BLATTIDÆ.

*Ischnoptera borealis* Bruner.

Clark county, Kan., 1962 ft.; June, F. H. Snow. One male. This individual fully agrees with a specimen from Nebraska City, Otoe county, Neb.

*Nyctobora mexicana* Saussure.

Texas. One female.

*Homœogamia erratica* Rehn.

Clark county, Kan., 1962 ft.; June, F. H. Snow. One male. This record extends the range of the species considerably to the north.

### Family MANTIDÆ.

*Litaneutria minor* Scudder.

Bill Williams Fork, Mohave-Yuma counties, Ariz.; August, F. H. Snow. One female.

Cactus Plain, Yuma-Yavapai counties, Ariz.; F. H. Snow. One female.

*Stagmomantis carolina* Linnaeus.

Lawrence, Douglas county, Kan.; September, E. S. Tucker; and October 4, 1895, B. Brown. Two females.

Douglas county Kan.; October, at electric light, E. S. Tucker. One male.

*Stagmomantis limbata* Hahn.

Bill Williams Fork, Mohave-Yuma counties, Ariz.; August, F. H. Snow. One female.

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\* Kansas University Science Bulletin, vol. II, No. 12, pp. 323, 324.

## Family ACRIDIIDÆ.

*Paratettix toltecus* Saussure.

Bill Williams Fork, Mohave-Yuma counties, Ariz.; August, F. H. Snow.  
Five females.

*Telmatettix aztecus* Saussure.

Bill Williams Fork, Mohave-Yuma counties, Ariz.; August, F. H. Snow.  
One male.

*Bootettix argentatus* Bruner.

Bill Williams Fork, Mohave-Yuma counties, Ariz.; August, F. H. Snow.  
One female.

*Eritettix navicula* Scudder.

Hamilton county, Kan., 3350 ft.; F. H. Snow. One female.

Morton county, Kan., 3200 ft.; June, 1902, F. H. Snow. Three males.

Clark county, Kan., 1962 ft.; May, F. H. Snow. Two females.

Considerable variation in the flexure of the lateral carinæ of the pronotum is exhibited by the above-listed specimens. In one female, these carinæ are practically straight and without any appreciable constriction, while the others have the reverse true to a greater or less extent.

*Amphitornis bicolor* Thomas.

Morton county, Kan., 3200 ft.; F. H. Snow. One male.

Clark county, Kan., 1962 ft.; F. H. Snow. One female.

The black lateral bars on the pronotum are not as broad and distinct as in some Nebraska specimens examined.

*Orphulella compta* Scudder.

Bill Williams Fork, Mohave-Yuma counties, Ariz.; August, F. H. Snow.  
One male.

*Boopedon nubilum* Say.

Kansas; July. One female.

*Psolessa maculipennis* Scudder.

Clark county, Kan., 1962 ft.; May or June, F. H. Snow. Two females.

*Stirapleura delicatula* Scudder.

Morton county, Kan., 3200 ft.; F. H. Snow. One male.

Hamilton county, Kan., 3350 ft.; June, F. H. Snow. One female.

Willow Park, Colo. Two females.

Estes Park, Larimer county, Colo.; July, 1892, F. H. Snow. One female.

*Ligurotettix kunzei* Caudell.

Bill Williams Fork, Mohave-Yuma counties, Ariz.; August, F. H. Snow.  
One male, one female.

*Arphia conspersa* Scudder.

Clark county, Kan., 1962 ft.; May or June, F. H. Snow. One male, one female.

*Chortophaga varidifasciata* De Geer.

Clark county, Kan., 1962 ft.; F. H. Snow. One male, two females.

*Hippiscus tuberculatus* Palisot.

Clark county, Kan., 1962 ft.; May, F. H. Snow. One male.

*Hippiscus corallipes* Haldeman.

Clark county, Kan., 1962 ft.; June, F. H. Snow. Two males, two females.

*Hippiscus conspicuus* Scudder.

Hamilton county, Kan., 3350 ft.; F. H. Snow. One male.

*Derotmema delicatum* Scudder.

Bill Williams Fork, Mohave-Yuma counties, Ariz.; August, F. H. Snow.  
One male.

*Mestobregma boreale* Saussure.

Caddoa, Bent county, Colo.; F. H. Snow. One male. As far as can be made out from the meager original description, this specimen represents Saussure's boreale. It is separated from plattei by the superiorly constricted frontal costa.

*Trepidulus rosaceus* McNeill.

Bill Williams Fork, Mohave-Yuma counties, Ariz.; August, F. H. Snow.  
One female.

*Conozoa sulcifrons* Scudder?

Bill Williams Fork, Mohave-Yuma counties, Ariz.; August, F. H. Snow.  
Two females.

*Trimerotropis salina* McNeill?

Clark county, Kan., 1962 ft.; June, F. H. Snow. One male.

*Trimerotropis saxatilis* McNeill.

Caddoa, Bent county, Colo.; F. H. Snow. One male.

*Trimerotropis snowi*, n. sp.

Type: female. Congress Junction, Yavapai county, Ariz.; July, F. H. Snow. Collection University of Kansas. Allied to *T. melanoptera* McNeill, but with the vertex slightly narrower, the eye slightly shorter, the basal and median dark bands of the tegmina more distinctly composed of spots, the yellow of the wings more extensive and the fuscous band narrower. Some characters would throw this species under F1 of McNeill's table, but it agrees with nothing in that section, and is no doubt close to *melanoptera*, paratypes of which have been compared with *snowi*.

Size large; form somewhat robust. Interspace between the eyes equal to the transverse diameter of the eye; scutellum of the vertex slightly broader than long, shallow, median and lateral carina distinct but low, the former not distinguishable on the occiput; lateral foveolæ rather small, sublanceolate, shallow; frontal costa subequal for the greater part with a slight constriction above the ocellus, moderately sulcate, failing to reach the clypeus by a considerable distance; eye not prominent, very distinctly shorter than the infraocular portion of the genæ; antennæ slender, elongate, exceeding the head and pronotum by half the length of the latter. Pronotum considerably expanded posteriorly, metazona about one and three-fourths the length of the prozona; anterior margin subtruncate, posterior margin rectangular with the angle rounded; median carina low and weak; prozona with several transverse rugæ, metazona subgranulose; lateral lobes subequal in width, the anterior margin slightly arcuate, postero-inferior angle rounded. Tegmina long and rather broad, apex obliquely truncate; the costal field wide; intercalary vein for its whole length closer to the median than to the ulnar vein, though somewhat approaching the latter proximally. Wings moderately long, rather broad, slightly more than half again as long as broad. Posterior femora comparatively slender, not exceeding the apex of the abdomen.

General color vinaceous buff, becoming vinaceous on the head and pleura.

Lower part of head and face hoary; eyes burnt sienna; antennæ blackish brown. Pronotum with several whitish, longitudinal bars on the lateral lobes and a number of small blackish points on the disk of the

metazona. Tegmina with the transverse bands broken and dissected into blotches of greater or less size, yet retaining their position in their respective groups; the apical bar is not defined, as the blotches are more properly annuli and more isolated; apical portion hyaline except at the costal margin, and with a number of scattered annuli. Wings with the disk longer than broad, primrose yellow; fuscous band broad and solid blackish brown, equaling one-third the length of the wing and extending to the internal margin of the wing; apical fourth hyaline with the longitudinal veins blackish brown; ulnar tænia very short and blunt, not reaching one-third the distance to the base of the wing. Abdomen above scarlet vermillion, below wood brown. Posterior femora externally dull vinaceous, faintly hoary, and with three obscure blackish bars, the pre-apical one of which is the most distinct; internal face scarlet vermillion with two black bars; inferior sulcus scarlet vermillion with one (pre-apical) black bar; genicular region blackish internally, dull fuscous externally. Posterior tibiæ with the external face basally flesh color, median and apical sections and the basal internal face scarlet vermillion; spines tipped with black.

Measurements: Length of body, 38 mm.; length of pronotum, 8.2 mm.; greatest width of pronotum, 7 mm.; length of tegmina, 38 mm.; greatest width of tegmina, 8 mm.; length of wings, 35 mm.; width of wings, 21 mm.; length of posterior femora, 17.5 mm.

The type is the only specimen of this species examined. I take pleasure in dedicating this species to Prof. F. H. Snow, who collected the type.

*Anconia integra* Scudder.

Bill Williams Fork, Mohave-Yuma counties, Ariz.; July and August, F. H. Snow. Three females. As is usual with this species, the above series exhibits a great amount of color variation.

*Heliastus aridus* Bruner.

Bill Williams Fork, Mohave-Yuma counties, Ariz.; August, F. H. Snow. Two females.

*Heliastus minimus* Scudder.

Bill Williams Fork, Mohave-Yuma counties, Ariz.; August, F. H. Snow. One female. This specimen is undoubtedly this species, but it is considerably larger than the measurements given by Scudder. The form of the lower portion of the lateral lobes of the pronotum does not appear very materially different from *H. aridus*, but the form of the pronotum, the slender posterior femora and peculiar coloration as well as size will readily distinguish this well-marked species.

*Titthotyle maculata* Bruner.

Bill Williams Fork, Mohave-Yuma counties, Ariz.; August, F. H. Snow. One female. This species has been definitely recorded but once before, then from Needles, Cal., a locality not very distant from Bill Williams Fork.

*Leptysma marginicollis* Serville.

Bill Williams Fork, Mohave-Yuma counties, Ariz.; August, F. H. Snow. One female. This individual is inseparable from Florida specimens.

*Schistocerca shoshone* Thomas.

Bill Williams Fork, Mohave-Yuma counties, Ariz.; August, F. H. Snow. One male.

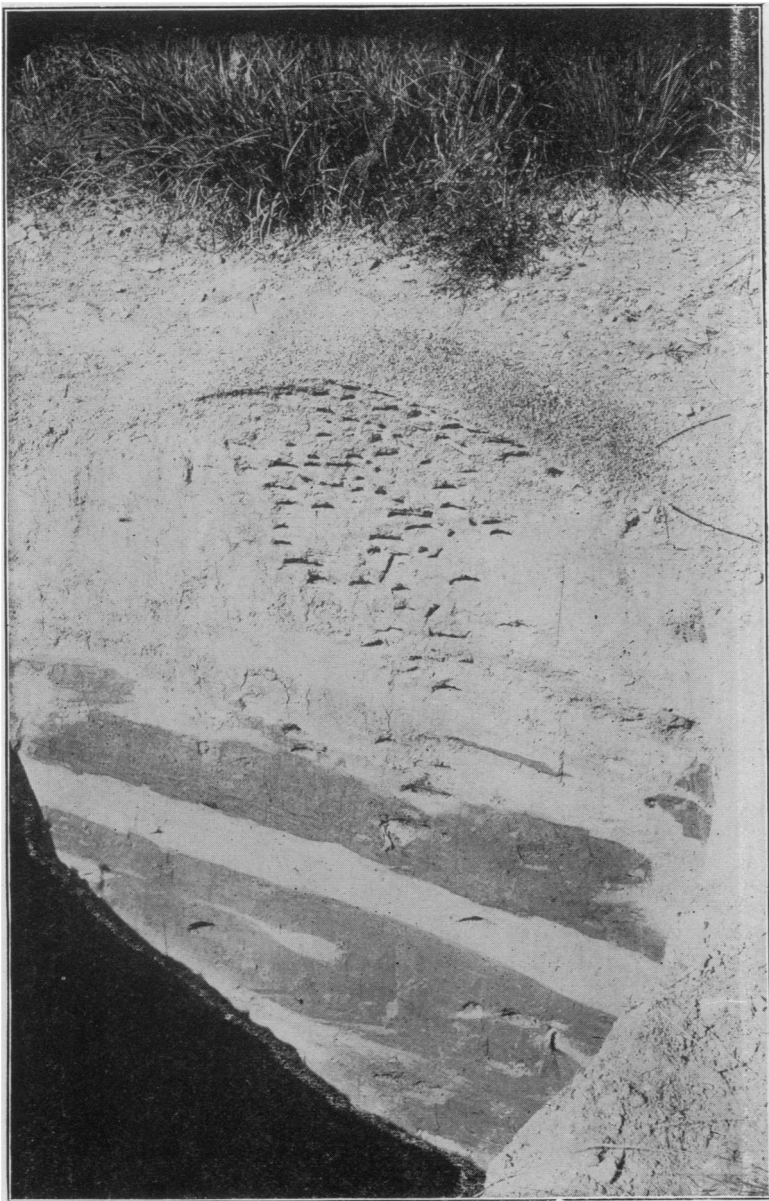


PLATE XXVIII.—Vertical Section of Ant Mound at Hays City, Kan.  
(Showing five feet of excavation )

*Schistocerca venusta* Scudder.

Bill Williams Fork, Mohave-Yuma counties, Ariz.; August, F. H. Snow.  
One female. This individual is considerably larger than representatives of the same sex from Salt Lake City, Utah, and San Diego county, Cal.

*Schistocerca vaga* Scudder.

Bill Williams Fork, Mohave-Yuma counties, Ariz.; August, F. H. Snow.  
One male.

*Melanoplus flavescens* Scudder.

Bill Williams Fork, Mohave-Yuma counties, Ariz.; August, F. H. Snow.  
One female. I owe the identification of this specimen to Mr. A. N. Caudell, who kindly compared it with United States National Museum material.

*Melanoplus flavidus* Scudder.

Bill Williams Fork, Mohave-Yuma counties, Ariz.; August, F. H. Snow. One male. Mr. A. N. Caudell kindly compared this specimen and supplied the above identification.

Clark county, Kan., 1962 ft.; June, F. H. Snow. One female.

*Melanoplus canonicus* Scudder.

Bill Williams Fork, Mohave-Yuma counties, Ariz.; August, F. H. Snow. One male, one female. The furcula of the male individual are more robust apically than in Scudder's figure.

*Melanoplus compactus* Scudder.

Clark county, Kan., 1962 ft.; June, F. H. Snow. Two females. Previously recorded from Dakota and Sheridan county, Neb.

*Melanoplus minor* Scudder.

Clark county, Kan., 1962 ft.; June, F. H. Snow. One male, one female.

*Melanoplus yarrowi* Thomas.

Bill Williams Fork, Mohave-Yuma counties, Ariz.; August, F. H. Snow.  
One male, one female.

South Arizona; August, 1902, F. H. Snow. One male.

These individuals agree well with a pair from Phoenix, Ariz. A female specimen from Logan county, Kan., F. H. Snow, August, is doubtfully referred to this species. The specimen is almost identical in structure, and, if true *yarrowi*, considerably extends the range of the species.

*Poecilotettix sanguineus* Scudder.

Bill Williams Fork, Mohave-Yuma counties, Ariz.; August, F. H. Snow.  
One male, one female.

## Family LOCUSTIDÆ.

*Scudderia furcata* Bruner.

Douglas county, Kan., 900 ft.; September, V. L. Kellogg and E. S. Tucker.  
Two males, five females.

*Scudderia furcifera* Scudder.

Southern Arizona; August, 1901, F. H. Snow. One male, one female. Previously recorded in the United States from Prescott, Ariz.

*Amblycorypha scudderi* Bruner.

Douglas county, Kan., 900 ft.; V. L. Kellogg. One female. This species was described from eastern Nebraska.

*Amblycorypha parvipennis* Stal.

Douglas county, Kan., 900 ft.; F. H. Snow. One male. This species was previously known only from Texas.

*Amblycorypha hausteca* Saussure.

Southern Arizona; August, 1902, F. H. Snow. One female. This record extends the range of the species considerably to the west.

*Microcentrum laurifolium* Linnæus.

Douglas county, Kan.; September. One male.

Southern Arizona; August, 1902, F. H. Snow. One male.

The Arizona record is considerably west of any previous captures, and may represent accidentally introduced stock.

*Conocephalus crepitans* Scudder.

Douglas county, Kan.; September. One male.

Sedgwick county, Kan., 1300 ft.; E. S. Tucker. One male.

These individuals fully agree with Lincoln, Neb., specimens.

*Conocephalus triops* Linnæus.

Douglas county, Kan.; taken at electric light, September, E. S. Tucker. One male.

*Concephalus mexicanus* Saussure.

Bill Williams Fork, Mohave-Yuma counties, Ariz.; August, F. H. Snow. One male.

*Orchelimum glaberrimum* Burmeister.

Douglas county, Kan.; taken at electric light, September, E. S. Tucker. One male.

*Orchelimum volantum* McNeill.

Douglas county, Kan.; taken at electric light, July, E. S. Tucker. One female.

This species was previously known only from Illinois and Indiana.

*Orchelimum gladiator* Bruner.

Douglas county, Kan., 900 ft.; F. H. Snow. One male. This species was previously recorded only from Nebraska and Indiana.

*Orchelimum cuticulare* Serville—Redt (?)

Douglas county, Kan., 900 ft.; September, Mary H. Wellman. One female. This form was previously recorded from Texas.

*Orchelimum longipenne* Scudder.

Douglas county, Kan.; taken at electric light, July, E. S. Tucker. One female.

*Xiphidium fasciatum* De Geer.

Colorado Springs, El Paso county, Colo., 5915 ft.; August, E. S. Tucker. One male.

*Xiphidium strictum* Scudder.

Douglas county, Kan.; September. Two females.

*Xiphidium attenuatum* Scudder.

Douglas county, Kan.; taken at electric light, August, E. S. Tucker. One male. On comparing authentic specimens of *lanceolatum* Bruner, they are seen to be identical with this species.

*Capnobotes fuliginosus* Thomas.

Congress Junction, Yavapai county, Ariz.; July, F. H. Snow. One female.

*Stipator (Orchesticus) cragini* Bruner.

Wallace county, Kan., 3000 ft.; F. H. Snow. One male.

*Eremopedes balli* Caudell.

Magdalena mountains, Socorro county, N. M.; August, 1894, F. H. Snow. One female. This specimen was determined by Mr. A. N. Caudell.



*Plagiostira gracila*, n. sp.

Type: Female. Bill Williams Fork, Mohave-Yuma counties, Ariz.; August, F. H. Snow. Apparently allied to *P. albofasciata* Scudder and Cockerell, but differing in the smaller size, the slenderer posterior femora and broader and weaker longitudinal bars on the pronotum and abdomen.

Size medium; form slender and elongate. Head with the occiput rather flat, slightly arched transversely; fastigium broader than the first antennal joint, apically decurved and touching the frontal process, slightly sulcate in the basal portion; eyes rather large and moderately prominent, subglobose, truncate anteriorly; antennae equal to the body and ovipositor in length. Pronotum longitudinal, transversely arched; anterior margin subtruncate, posterior margin very broadly and shallowly emarginate; lateral lobes almost twice as long as high, posterior half of the margin diagonally emarginate. Abdomen somewhat compressed; ovipositor almost equal to the body in length, rather broad, slightly arcuate, apex acute; subgenital plate slightly longer than broad, the apical margin with a median V-shaped emargination. Prosternum unarmed. Limbs all slender. Anterior femora slightly shorter than the head and pronotum, unarmed except for a pair of genicular spines; tibiae slightly longer than the femora, armed on the superior anterior margin with two or three spines, inferior margins regularly armed. Median femora slightly longer than the anterior pair and similarly armed; tibiae with four spines on the superior anterior and two on the superior posterior margins, inferior margins regularly armed. Posterior femora very slender and elongate, almost equal to the body in length, moderately bullate basally, tapering gradually to the slender distal half which is subequal, inferior internal margin with three to five small median spines; tibiae compressed quadrate in section, slightly longer than the femora, regularly armed above except at the base, beneath irregularly armed with six or seven pairs and a few scattered spines; metatarsi about equal to the third and fourth tarsal joints united.

General color, cinnamon, with a pair of rather broad, subparallel streaks of ecru drab extending from the upper margin of the eyes to the apex of the abdomen, lateral margins of the pronotum broadly margined with the same tint, face washed with greenish, eyes walnut brown, flanked posteriorly on the head by a brownish postocular bar; anterior and median femora liver brown, tibiae clear green; posterior femora hoary, suffused apically with clear green, which latter is the color of the tibiae and tarsi.

Measurements: Length of body, 26 mm.; length of pronotum, 6.1 mm.; greatest dorsal width of pronotum, 4 mm.; length of posterior femora, 25 mm.; length of ovipositor, 23.2 mm.

The type is the only specimen examined.

*Anteloplus notatus* Scudder.

Bill Williams Fork, Mohave-Yuma counties, Ariz.; August, F. H. Snow.

One male. This specimen has been examined and compared with U. S. National Museum material by Mr. A. N. Caudell.

*Stenopelmatus oculatus* Scudder.

Clark county, Kan., 1962 ft.; June, F. H. Snow. One male.

Magdalena mountains, Socorro county, N. M.; August, 1894, F. H. Snow.

Three males, one female.

*Ceuthophilus paucispinosa*, n. sp.

Type: Female. Southern Arizona; August, 1902, F. H. Snow. Allied to *C. varicator* Scudder, but differing in the regularly serrate inferior margins

of the posterior femora, the fewer spines on the anterior and median femora, and the longer ovipositor.

Size rather large; form rather robust. Head short and broad; vertex strongly declivent; fastigium not half as wide as the first antennal joint, narrowly sulcate; interspace between the eyes equal to about twice the length of the eye; antennae rather stout, exceeding the body in length; eyes pyriform in outline; palpi with the terminal joint curved. Pronotum strongly arched transversely; anterior and posterior margins truncate, lateral lobes inferiorly subtruncate. Mesonotum and metanotum laterally extending below the pronotum. Abdomen briefly but uniformly hirsute; cerci not half the length of the ovipositor, basally stout, apically attenuate; ovipositor about four-fifths the length of the posterior femora, stout basally, tapering to the apex, which is slightly upturned and rounded below. Anterior femora one and a third times the length of the pronotum, armed on the anterior margin with a single preapical spine; tibiae unarmed above. Median femora very slightly exceeding the anterior femora in length, unarmed below and with a single genicular spine; tibiae armed above with two pair of spines. Posterior femora rather stout, considerably shorter than the body, three and a half times as long as broad, apical portion rather stout, inferior margins minutely serrulate; tibiae about one and one-sixth the length of femora, spurs four pairs in number, margins distinctly serratodentate, median inner calcaria distinctly longer than the external, inferior surface with a single median spine in addition to the apical pair; metatarsi about as long as the other tarsal joints united; third joint about half the length of the second.

General color, tawny-olive, suffused on the pronotum with bistre, each abdominal segment posteriorly edged with the same. Ovipositor ferruginous. Tarsi pale cinnamon.

Measurements: Length of body, 18.5 mm.; length of pronotum, 5.5 mm.; greatest width of pronotum, 5.7 mm.; length of posterior femora, 14 mm.; length of ovipositor, 12 mm.

*Ceuthophilus arizonensis* Scudder.

Magdalena mountains, Socorro county, N. M.; July, 1894, F. H. Snow. One male.

*Ceuthophilus neomexicanus* Scudder.

Clark county, Kan., 1962 ft.; June, F. H. Snow. One male. This specimen fully agrees with the structural characters of *neomexicanus*, as given by Scudder, but differs slightly in the color, which, however, appears in this case to be of very trifling importance.

*Ceuthophilus ater* Scudder.

Douglas county, Kan.; April, F. H. Snow. One male. This individual agrees very well with the specimens from San Miguel county, New Mexico, referred by me to this species, except for its paler coloration.

*Phrixocnemis franciscanus*, n. sp.

Types: Male and female. Humphrey's Peak, at base, 9500 ft., Coconino county, Arizona; August, F. H. Snow. This species and the following can readily be distinguished from the other species of *Phrixocnemis* by the larger posterior tibiae, which are about equal to the femora in length. The tibiae are not expanded above as they are in *validus* and *bellicosus*, while the comparatively straight tibiae removes them from *truculentus*.

MALE.—Size large; form very stout, subfusiform. Head broad, anteriorly flattened; occiput rounded and descending vertically to the interocular

region; eyes irregularly quadrate in outline, separated by one and one-half times their greatest length; antennæ somewhat exceeding the body in length; palpi with the third joint slightly shorter than the fifth. Pronotum arched transversely, somewhat flattened above; anterior margin with the median portion slightly emarginate, posterior margin truncate, inferior margin broadly rotundate. Mesonotum and mesonotum (metanotum?) posteriorly truncate, laterally extending a short distance below the pronotum. Abdomen regularly armed with minute spiniform tubercles; cerci about half the length of the posterior femur, regularly tapering from the base to the apex; subgenital plate divided to the base by a narrow slit, tips divergent. Anterior femora about a fifth as long again as the pronotum, armed beneath on the anterior margin with a single large preapical spine and several smaller ones, no genicular spine present; tibiæ unarmed above. Median femora about equal to the anterior pair in length, armed beneath on the anterior margin with three or four spines, on the posterior margin with several spines, genicular spine present on one limb and absent on the other; tibiæ armed above with two pairs of spines. Posterior femora short, stout, not quite three times as long as broad, inferior margins with their distal two-thirds closely and strongly armed with short, stout teeth, no genicular spine present; tibiæ slightly shorter than the femora, hardly curved, armed above with four pairs of spines, below with two apical pairs and four longitudinally disposed spines, calcaria comparatively short, the median pair considerably exceeding the others in length; metatarsi slightly longer than the fourth tarsal joint, second joint very slightly longer than the third joint.

FEMALE.—Size medium; form moderately elongate, subequal; structure as in the male, with the following exceptions: Head with the interspace between the eyes somewhat greater; antennæ not exceeding the body in length. Cerci short, not more than one-third the length of the posterior femur; ovipositor two-thirds the length of the posterior femur, thick at the base, narrow and subequal in the apical half, not curved, apex obliquely truncate, the superior point acute and spiniform, internal valves with five teeth; subgenital plate transverse, apically rounded, with a slight median emargination. Anterior femora with the distinct pregenicular spine but no smaller ones.

General color ochraceous, suffused above with Vandyke brown.

Measurements: Length of body, male 22 mm., female 19 mm.; length of pronotum, male 6.5 mm., female 4.8 mm.; greatest width of pronotum, male 9 mm., female 6 mm.; length of posterior femora, male 16 mm., female 9.5 mm.; length of ovipositor, 6.2 mm.

An additional smaller male from the type locality has been examined.

*Phrixocnemis socorrensis*, n. sp.

Types: Male and female. Magdalena mountains, Socorro county, N. M.; August, 1894, F. H. Snow. Allied to *P. franciscanus*, but differing in the longer and slenderer ovipositor.

MALE.—Size large; form rather elongate, compressed. Head broad, flattened anteriorly; interspace between the eyes not quite twice the greatest diameter of the eye; eye subpyriform; antennæ slightly longer than the body; third palpal joint slightly shorter than the fifth. Pronotum arched transversely, somewhat compressed; anterior margin slightly emarginate, posterior truncate. Mesonotum and metanotum extending slightly below the pronotum. Abdomen somewhat compressed; cerci about half the length

of the posterior femora, stout basally but tapering to a fine point; subgenital plate divided for half its length. Anterior femora exceeding the pronotum by about one-sixth the length of the latter, armed with a single preapical spine on anterior inferior margin; tibiae somewhat flattened but unarmed above. Median femora about equal to the anterior pair in length, armed inferiorly on the anterior margin with two and on the posterior margin with five spines; tibiae armed above with two pairs of spines. Posterior femora moderately stout, three times as long as broad, armed below on the distal half of the external and on almost the entire length of the internal with closely set, short teeth, intervening sulcus deep; tibiae equal to the femora in length, straight, bearing four pairs of spurs, and between them supplied a number of blunt spines of the second grade, below armed with two apical pairs of spines and a longitudinally disposed series of four spines; middle calcaria but slightly longer than the upper pair; metatarsi slightly longer than the fourth tarsal joint, second joint slightly longer than the third.

**FEMALE.**—Similar to the male except for the following points: Ovipositor almost two-thirds the length of the posterior femora, stout basally, slender apically, the apex obliquely truncate and produced above into a spiniform process, internal valves with five recurved hooks; cerci short, thick basally, tapering; subgenital plate transverse, rounded, with no appreciable median emargination. Median femora armed on each inferior margin with three spines. Posterior femora slenderer than in the male, almost three and a half times as long as broad; tibiae armed with but three spines in the inferior longitudinal series instead of four.

General color ochraceous, suffused above and particularly on the margins of segments with Vandyke brown.

**Measurements:** Length of body, male 26.5 mm., female 24 mm.; length of pronotum, male 6.8 mm., female 6.5 mm.; greatest width of pronotum, male 8.6 mm., female 7.5 mm.; length of posterior femora, male 16.5 mm., female 14.5 mm.; length of ovipositor, 9 mm.

Two additional specimens, a male and a female, from the type locality have also been examined, both smaller than the type individuals.

***Daihinia brevipes* Haldeman.**

Colorado; July, F. H. Snow. One male, one female.

Clark county, Kan., 1962 ft.; F. H. Snow. One female.

The male individual has, with the preapical spine, but one exceptionally large spine on the external margin of the posterior femora.

***Udeopsylla nigra* Scudder.**

Douglas county, Kan.; June. One male.

***Udeopsylla robusta* Haldeman.**

Clark county, Kan., 1962 ft.; June, F. H. Snow. One male.

Colorado; July, F. H. Snow. One male.

The University collection also contains a large male individual of this species from Sedgwick county, Kan., collected by E. S. Tucker.

***Udeopsylla serrata*, n. sp.**

**Type:** Male. Southern Arizona; August, 1902, F. H. Snow. Differing from *U. robusta* and *nigra* by the smaller spines of the inferior margin of the posterior femora, and the considerably smaller size. From *U. vierecki*, with which it agrees in the spine armature of the posterior femora, it differs in the smaller size, slenderer posterior tibiae, and the slightly more recurved lateral lobes of the mesonotum and metanotum.

Size medium; form short, broad fusiform. Head broad; interspace between the eyes almost equal to twice the width of the eye; eyes broad ovoid; antennæ almost twice the length of the body; palpi with the fifth joint half again as long as the third. Pronotum arched transversely, slightly compressed; anterior border broadly emarginate, posterior truncate, lateral lobes subtruncate. Mesonotum and metanotum very slightly deeper than the pronotum. Abdomen distinctly but moderately compressed, lateral aspects sprinkled with fine granules, cerci short, about one-fourth the length of the posterior femora, subgenital plate deeply and broadly emarginate, the lateral portions projecting as obtuse-angulate lobes. Anterior femora about one-sixth longer than the pronotum, anterior inferior margin unarmed or with a single preapical spine; tibiæ unarmed above. Median femora about equal in length to the anterior pair, armed beneath on the anterior margin with one to four spines, on the posterior margin with five spines. Posterior femora slightly more than three times as long as broad, the superior face bearing a number of short spiniform tubercles, distal two-thirds of the inferior margins with close-set series of short teeth, intervening sulcus moderately deep; tibiæ equal to the femora in length, very slightly bent, armed above with four pairs of spurs and a number of spines of the second grade, below armed apically with two pairs and two single spines, inferior calcaria exceeding the others in length.

General color of the dorsal surface of the body burnt sienna inclining toward Vandyke brown on the abdomen. Ventral surface and limbs ochraceous. Measurements: Length of body, 15 mm.; length of pronotum, 5.2 mm.; greatest width of pronotum, 6.5 mm.; length of posterior femora, 14 mm.

Family GRYLLIDÆ.

*Tridactylus apicalis* Say.

Bill Williams Fork, Mohave-Yuma counties, Ariz.; August, F. H. Snow.  
One individual.

*Gryllus pennsylvanicus* Burmeister.

Bill Williams Fork, Mohave-Yuma counties, Ariz.; August, F. H. Snow.  
One male.

*Ecanthus fasciatus* Fitch?

Bill Williams Fork, Mohave-Yuma counties, Ariz.; August, F. H. Snow.  
One female. Some doubt is attached to this identification.